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Test and Evaluation

**TEST AND EVALUATION (T&E) RISK
MANAGEMENT**

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OPR: HQ AFMC/DOP (Mr. Alan Rismiller)

Certified by: HQ AFMC/DOP
(Col Harold D. Steck, Jr.)

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This policy directive outlines T&E policy within the Air Force Materiel Command (AFMC). This publication applies to all personnel who conduct or are involved with T&E of aircraft and aircraft-related systems, aircraft weapons, munitions, space and missile systems, and major Command, Control, Communications, Computers, and Intelligence (C4I) systems. Although it applies specifically to these categories of systems, the general principles are also applicable to the T&E of other systems, subsystems, and components to manage risk to personnel and valuable test assets. This policy also applies to the T&E of commercial and non-developmental item (NDI) systems, with emphasis on their military missionization, employment, and operating environment. For these commercial and NDI systems, the review processes may be streamlined as appropriate to the level of risk.

1. Scope. This directive identifies a set of processes for test risk management which must be successfully accomplished prior to the conduct of T&E within AFMC. This directive is to be used in conjunction with Air Force Instruction (AFI) 99-101, *Developmental Test and Evaluation*; AFI 91-202 and AFMC Supplement 1, *The US Air Force Mishap Prevention Program*; AFI 91-204, *Safety Investigations and Reports*; AFMC Pamphlet (AFMCPAM) 63-101, *Acquisition Risk Management Guide*; and AFMCPAM 91-1, *Flight Safety and Technical Considerations Guide for Flight Testing*, to manage the risk inherent in T&E and to ensure a disciplined test process. This directive applies to T&E conducted by test centers, product centers, air logistics centers, and the Air Force Research Laboratory for which AFMC has accountability, whether or not it is conducted on AFMC-owned or controlled test assets. Although the processes specified herein apply primarily to organizations conducting T&E, single managers are responsible to ensure the appropriate programmatic resources (including data collection and analysis systems, contractor support, structural tracking systems, etc.) are available to manage the risk inherent in T&E and support these processes.

2. Implementation. Commanders of centers and/or units having a T&E mission will designate a single focal point for T&E and establish local procedures (operating instructions, guides, etc.) for implementing

the T&E process consistent with the DOD 5000-series regulations, the Air Force 99-series instructions, and this policy directive.

3. Reviews. All T&E will be conducted in accordance with an approved plan. The test plan will be prepared to meet the objectives defined and agreed to by the customer, the Responsible Test Organization (RTO) (as defined by AFI 99-101), and the organization conducting the test. Prior to test conduct, each test plan will be subjected to technical and safety reviews. Each center/unit will document local processes and procedures for determining the need for formal Technical Review Boards (TRB) and Safety Review Boards (SRB); the participation on these boards (to include the chairperson); the streamlined review process when formal boards are determined not necessary; and the approval process and authority. To ensure the independence of these reviews, the approval authority will be separate from the organization preparing the test plan.

3.1. The technical review process will ensure a thorough assessment of the test plan for technical soundness and adequacy. The process will evaluate test requirements and objectives, ensure the overall approach will meet the requirements, and verify objectives can be met with acceptable technical risk.

3.2. The safety review process will ensure a thorough assessment of the adequacy of test safety planning. The process will evaluate the extent to which the severity and the probability of occurrence of known hazards have been minimized and assess the residual safety risk. The test approval authority must accept the residual level of safety risk.

3.3. Readiness reviews will be conducted before the commencement of testing for new-starts and major system upgrades, major test milestones (first flight/launch, etc.), or after an extended break in test activity (transition in acquisition program phase, mishap investigation, etc.). The readiness review will ensure all preparations for initiating a test have been completed and known anomalies have not compromised the execution of the test. All reasonable efforts to minimize risk must be made and verified to the test approval authority.

3.4. Center/unit commanders, single managers, and/or their designee may implement additional reviews and assessments to ensure high confidence in a system's readiness for test with an acceptable level of risk.

3.5. Based on the numerous review processes and their competing requirements for resources, center/unit commanders and/or single managers may combine reviews or otherwise streamline the review processes. This streamlined approach must still confirm a level of safety risk and technical readiness consistent with the test risk assessment.

4. Additional Requirements:

4.1. The RTO, test customer, and the organization conducting the test will evaluate test requirements with respect to risks and costs prior to test plan development to identify potential areas of unjustified risk. The customer will validate the need to accomplish all test points expected or determined to be of medium or high risk. The test approval authority assumes the risk associated with test conduct and is responsible for weighing the benefits of a given test against the risk.

4.2. Flight tests of aircraft and aircraft-related systems, aircraft weapons, and munitions categorized as medium or high risk (AFI 91-202/AFMC Sup 1) and conducted by an organization other than an

AFMC test center require independent review by an AFMC test center. This applies to those tests in which Air Force assets and resources are involved and those for which AFMC has accountability.

4.3. Piloting of medium and high-risk events by other than graduates of a test pilot school will be specifically documented in the test plan for consideration by the test approval authority.

5. Waivers. Submit requests for waivers to this policy to HQ AFMC/DO for approval.

WILBERT D. PEARSON, JR., Brigadier General, USAF
Director of Operations